

**SECTION 03 48 24**  
**PRE-CAST CONCRETE COLUMBARIUM UNITS**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This section covers the installation of precast concrete columbarium caps, as shown on the drawings and specified herein, including but not limited to: preparation of setting surface and adhesive.
- B. Acceptable designs of the columbarium units components are provided as shown on the Drawings. The Contractor may use this design for this Work or may propose alternate designs of the corresponding components as follows:
  - 1. Design for alternate columbarium units shall comply with the design criteria as per Articles 1.3.F and further, if required by the Contractor, shall comply with the functional tests as per Article 1.3.G of this Specification.
  - 2. Unless indicated otherwise, all provisions of this Specification shall apply to the Contractor proposed design.
- C. This section covers installation of the Government-furnished (existing), Contractor-re-installed pre-cast columbaria cap, two per columbarium.

**1.2 RELATED DOCUMENTS**

- A. Section 31 20 11, EARTH MOVING (SHORT FORM)
- B. Section 04 43 00, NATURAL STONE VENEER for stone work.
- D. Section 07 92 00, JOINT SEALANTS, Materials and Workmanship for sealant application.

**1.3 MANUFACTURER / INSTALLER QUALIFICATIONS**

- A. Precast concrete columbarium caps shall be erected by an installer who has a minimum of 3 years experience in erection of the precast concrete columbarium units similar in material design and extent to that indicated on the drawings and specified herein.

- B. Supply and Installation of fastener system shall be by a product manufacturer and installer, both whom have had a minimum of 3 years experience in installation of similar design as indicated on the drawing.

#### **1.4 ALLOWABLE TOLERANCES**

- A. In addition to tolerances of individual elements required by American Concrete Institute Publication 533.3R, erection tolerances shall be as follows:
1. Variation of anchors and fasteners from dimensions specified..... 1/8"
  2. Variation in overall dimensions of precast element (height and width)..... 1/8"
  3. Maximum differential between adjacent units in erected position..... 1/4"
  4. Variation in thickness of precast panels and elements ..... 1/8"
  5. Maximum vertical differential between adjacent columbarium units in installed position... 1/8"

#### **1.6 SUBMITTALS**

- A. In accordance with Division 1 Section 01 33 23 SHOP DRAWINGS, PRODUCT DATA, and SAMPLES, furnish the following:
1. Samples: Submit sample of all fastening systems, mounting hardware and exposed surface finishes including, but not limited to, the following:
    - a. Shims.
    - b. Adhesives and grouts.
  2. Shop Drawings: Complete shop and erection drawings of all precast concrete columbarium caps, showing all dimensions and details of construction, installation and relation to adjoining work, attachments, inserts, and other items to be installed in the work of other trades, joint treatment, joint alignment coordinated with cap stone joints, and other work required for a complete installation.
  3. Production Drawings:
    - a. Lifting and erection inserts.
    - b. Method of erection and handling.

### 1.8 COORDINATION

- A. Coordinate the erection of precast concrete columbarium units with related work of other sections of the Specifications. Provide templates for inserts and other devices for anchoring precast concrete columbarium units to the work of other trades, in sufficient time to be built into adjoining construction. Perform cutting, fitting and other related work in connection with erection of precast concrete columbarium unit work. See Shop Drawing section for details regarding the coordination of work.

### 1.9 GUARANTEE

- A. Guarantee precast concrete columbarium unit work, including anchorage, joint treatment and related components to be free from all defects in materials and workmanship, including cracking and spalling, and after erection, completed work will be subject to terms of "Guarantee" article in Division 1 Specification Sections except that guarantee period is one year.

### 1.10 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. Federal Specifications (Fed. Spec.):
- QQ-S-766C (5).....Steel Plates, Sheets, and Strip-Corrosion  
Resisting
- QQ-W-423B.....Wire, Steel, Corrosive-Resisting
- TT-S-00227E (3).....Sealing Compound Elastomeric Type, Multi-  
Component (For Caulking, Sealing, And Glazing  
In Building And Other Structures)
- TT-S-00230C (2).....Sealing Compound: Elastomeric Type, Single  
Component (For Caulking, Sealing and Glazing In  
Building and Other Structures)
- C. American Concrete Institute (ACI) Publications:
- ACI 533.3R-70.....Fabrication, Handling And Erection of Precast  
Concrete.
- D. American Society for Testing Materials (ASTM) Standards:

A36/A36M-08.....Structural Steel  
A82/A82M-07 .....Steel Wire, Plain, for Concrete Reinforcement  
A185/A185M-07 .....Welded Steel Wire Fabric for Concrete  
Reinforcement.  
A615/A615M-08b.....Deformed and Plain Billet-Steel Bars for  
Concrete Reinforcement.  
C33-08.....Concrete Aggregates  
C150-07 .....Portland Cement

E. American Welding Society (AWS) Publications:

AWS D1.1-90.....Structural Welding Code  
AWS D1.4-80.....Welding Reinforcing Steel

**PART 2 - PRODUCTS**

**2.1 MISCELLANEOUS GALVANIZED STEEL ITEMS**

A. Bolts, nuts, washers, anchors, inserts, and the like for handling,  
erection, or use by other trades.

**2.2 BACK-UP MATERIAL**

A. Closed cell neoprene, butyl, polyurethane, vinyl or polyethylene foam  
rod, diameter approximately 1-1/3 times the joint width.

**2.3 BOND BREAKERS IF USED**

A. Type and material recommended by sealant manufacturer.

**2.3 ADHESIVES**

A. Type and material recommended by adhesive manufacturer.

**PART 3 - EXECUTION**

**3.1 HANDLING**

A. Before beginning installation, inspect work of other trades in-so-far  
as it affects the work of this Section. Commencing installation of  
precast concrete columbarium caps will be construed as acceptance, as  
suitable, of such work of other trades. Columbarium caps shall be  
handled in a nearly vertical plane at all times and stacked vertically  
on wood supports of adequate strength, until erected. Cover and  
protect precast concrete columbarium caps against staining and other  
damage.

### 3.2 ERECTION

- A. Reinstall, realign and otherwise correct improper installed caps.
  - 1. Accurately place and securely anchor precast concrete columbarium caps to adjoining construction in accordance with approved shop and erection drawings.
- B. Erect level, plumb and square within the specified allowable tolerances. Provide temporary supports and bracings as required to maintain position, stability, and alignment of units until permanent connections are completed. Align with existing wall cap units that are to remain in place.
  - 1. Install temporary steel or plastic spacing shims or bearing pads as precast concrete caps are being erected. Tack weld steel shims to each other to prevent shims from separating.
  - 2. Maintain horizontal and vertical joint alignment and uniform joint width as erection progresses.
  - 3. Remove projecting lifting devices and use sand-cement grout to fill voids within recessed lifting devices flush with surface or adjacent precast concrete surfaces when recess is exposed.
  - 4. Unless otherwise shown provide for uniform joint widths of 3/4-inch.

### 3.2 SETTING

- A. Where shown, joints shall be filled with sealant. Surfaces and other joints for precast concrete columbarium caps shall be cleaned of all dust, dirt and other foreign matter. Each precast element shall be set level and true to line with uniform joints. Joints required to have sealants shall be kept free of dirt and other contaminants for their full depth. Precautions shall be taken to protect precast concrete work from being damaged and soiled during and after installation. Wedges, spacers or other appliances which are likely to cause staining shall be removed from joints.

### 3.3 SEALING OF JOINTS

- A. Where shown and/or where ever required to make the work watertight, joints between precast concrete columbarium caps and between other precast elements and adjoining masonry, concrete and other materials shall be filled with back-up material for depth extending as required to form joint of depth as shown or recommended by sealant manufacturer. Provide bond breakers, at base of sealant where space for back-up does

not exist and to prevent sealant from bonding to material at base of joint.

1. Workmanship shall be in accordance with Division 1 Specification Sections.

### **3.4 CLEANING**

- A. After erection is complete, clean precast columbarium caps using materials, equipment and methods recommended by manufacturer.
- B. Clean mortar, adhesive, and any other deleterious material from concrete surfaces and adjacent materials immediately.

### **3.5 REPLACEMENT AND REPAIR**

- A. Precast units having minor defects not affecting serviceability or appearance may be repaired when approved by the Contracting Officer's Representative (COR) or Memorial Service Network (MSN) Engineer. Repaired work shall be sound, permanent, flush with adjacent surfaces and of color and texture matching similar adjoining surfaces and shall show no line of demarcation between original and patched surfaces. Replacement and repairs shall be done at no additional cost to the Government when the damage is caused by Contractor negligence.

- - - E N D - - -